

THE AUSTRALIAN PLANT DISEASE RECORDER.

Volume 1. Number 3.

July, 1949.

Editor: F.C. Butler, Biological Branch,  
Department of Agriculture,  
Box 36A, G.P.O., Sydney.

- - - -

I N D E X.

| <u>PLANT DISEASE NOTES:</u>                     | <u>Page.</u> |
|-------------------------------------------------|--------------|
| Cereals and Grasses ... ..                      | 34           |
| Vegetables ... ..                               | 36           |
| Fruit ... ..                                    | 40           |
| Miscellaneous Plants ... ..                     | 41           |
| <u>GENERAL AND MISCELLANEOUS NOTES</u> ...      | 44           |
| <u>COMMONWEALTH MYCOLOGICAL INSTITUTE NOTES</u> | 48           |

- - - oOo - - -







## PLANT DISEASE NOTES.

### CEREALS AND GRASSES:

#### SEVERE OUTBREAK OF WHEAT MOSAIC IN U.S.A.:

Professor W.L. Waterhouse has referred to me a recent letter received from Dr. H.H. McKinney of the U.S.D.A. concerning the present outbreak of wheat mosaic in Kansas, and suggested that I might comment on it.

Outbreaks of wheat mosaic seem to occur at intervals in Kansas, Illinois and Indiana, and sometimes cause individual crops to fail. McKinney states that the present outbreak has caused more damage in Kansas this year than ever before. As far as I know, no virus has yet been recorded on wheat in N.S.W. or anywhere in Australia. This is somewhat odd as it would be expected that one of the strains of cucumber mosaic, which are common enough, with vectors, in autumn months would have attacked wheat in some part of Australia.

McKinney considers that the virus or virus strains which are spreading in Kansas are mild and yellow streak mosaics, Nos. 6 and 7 of his classification of wheat mosaics (McKinney: U.S.D.A. Circ. 442, Sept., 1937). Aphids (undet.) appear to be responsible for the transmission. There is no evidence of soil transmission as occurs with wheat rosette. The viruses are transmissible readily by mechanical means and in the field are affecting only winter wheat. Inoculation tests, however, show they go to corn, barley, oats, sugar cane and several wild grasses. Wheat and wheat relatives are highly susceptible. Rye varieties are resistant or immune.

- C.J. MAGEE.

#### CROWN ROT OF SORGHUM AT ORD RIVER, W.A.:

During the wet season 1948-49 a fertilizer trial with Hegari grain sorghum was made at the Kimberley Research Station, Ord River, W.A. The plots were planted on 6th December, 1948, and harvested on 3rd March, 1949. Mr. E.C.B. Langfield, who conducted the trial reported: "What appeared to be crown rot showed up in this trial, this being the first time it has been recorded on the Station. The degree of infection in some plots was very high. Odd plants were completely destroyed and a number of rows showed evidence of disease in every plant." A specimen was sent to Canberra for examination and proved to be abundantly invaded by Fusarium moniliforme Sheld. the imperfect stage of Gibberella fujikuroi (Saw) Wr.

- D.O. NORRIS.

Handwritten title or header

First paragraph of text, appearing as a block of approximately 10 lines.

Second paragraph of text, appearing as a block of approximately 10 lines.

Third paragraph of text, appearing as a block of approximately 10 lines.



LEAF BLAST OF PANICUM:

The widespread occurrence in March, 1949, of Piricularia sp. on Dwarf Setaria (Panicum or Italian Millet) (Setaria italica (L.) Beauv.) on the Darling Downs of Queensland is of interest following Dr. N.H. White's reference to Piricularia oryzae on Digitaria sanguinalis (A.P.D.R. 1: 2: 18, 1949). Severe damage occurred in Panicum crops in March, and was associated with high humidity (mean relative humidity at 9 a.m. for March - 86%), and with showery weather over the previous six weeks.

Leaf lesions were numerous, circular to oval in shape, 1/16" to 1/8" in diameter, with an ash-grey to grey-brown centre and a prominent brown margin. On the undersides of the lesions, dense, dark-grey masses of conidia occurred. The fungus was present on the seed heads and apparently caused the uneven development of the heads. Conidia were 16-21 x 7-11 u.

- T. McKNIGHT.

LEAF RUST ON DACTYLIS GLOMERATA:

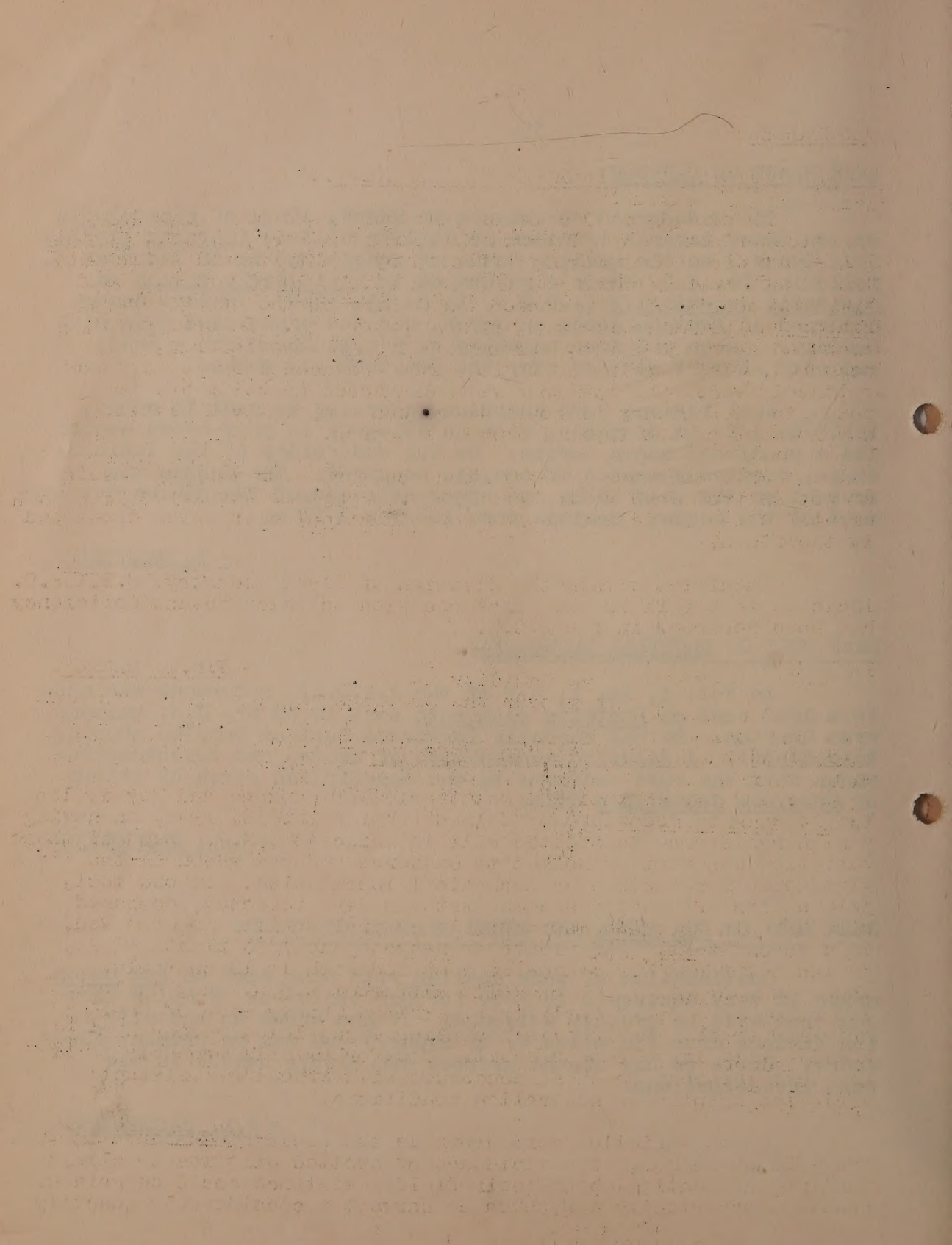
In Vol. 1, No. 1, p.2 of the A.P.D.R., reference was made to a leaf rust on Dactylis glomerata sent in by Mr. J.E. Skinner from Grafton. He has recently forwarded further samples showing teleutosori. A detailed examination of uredo- and teleutospores shows that the rust conforms to the description given by Arthur of Uromyces dactylidis Otth.

- W.L. WATERHOUSE.

STEM RUST ON POA ANNUA AND OTHER GRASSES REQUIRED:

Continuation of work dealing with stem rust on Poa annua makes it very desirable to have further isolates. Samples from any area will be greatly welcomed. It has shown up recently in the Windsor area (34 miles W. of Sydney) and may be present elsewhere. Rusts on any of the grasses are always useful in the rust investigations.

- W.L. WATERHOUSE.





VEGETABLES:POTASH DEFICIENCY OF POTATOES IN THE A.C.T.:

An experimental crop of potatoes grown on a gravelly ironstone ridge at the Dickson Experimental Farm, A.C.T., in the 1948-49 season was severely affected by a nutritional deficiency. The plants were stunted and suffered severe defoliation. Leaf symptoms consisted of a marked burnishing of the upper surface giving the plants a bronzed, shiny appearance. In some cases isolated necrotic spots, surrounded by a chlorotic area, occurred. The merging of these spots produced large dead areas on the leaves. The symptoms were diagnosed as being due to potassium deficiency although there was comparatively little development of the typical marginal scorch.

FX Factor was grown in sand culture with varying levels of potash from January to March 1949. Symptoms developed by plants in the deficient series were identical with those developed in the field.

Enquiries within the Division of Plant Industry, C.S.I.R.O. indicate that this is the first occasion on which potash deficiency has been recorded in the A.C.T.

- J.H.E. MACKAY.

SPOTTED WILT RESISTANT TOMATO VARIETIES:

The two Argentine tomato varieties Manzana and Rey de los Tempranos were described by Holmes (Phytopath. 38, 1948) as having a high resistance to spotted wilt in Princeton, N.J. Seed of these varieties was sent by Holmes to Canberra and was grown in the glasshouse for testing by mechanical inoculation. In one test, 3/10 plants of Manzana became systemically infected, compared with 4/4 plants of the susceptible control variety Kondine Red. In a second test, 2/60 plants of Manzana and 1/94 plants of Rey de los Tempranos were infected compared with 16/18 controls. These two varieties are of quite different types. Rey de los Tempranos is a dwarf early type bearing a heavy crop of small wrinkled fruit. Manzana is a staking type, late, rather shy-bearing with large smooth fruit. The former will probably be of greatest interest to those concerned with breeding resistant varieties adapted to Australian conditions.

These varieties were grown in the field at Canberra in the 1948-49 summer. The incidence of spotted wilt was so slight that no information about their field resistance could be gained. However, opportunity was taken to harvest a considerable quantity





of seed for the use of any who might be interested in trying them. Some 2500 gm. of seed of Rey de los Tempranos and 200 gm. of Manzana are available for distribution. Unfortunately bacterial canker appeared in the plots from which this seed came, though infection was not heavy. The seed was acid-extracted and any that is issued will be hot-water treated before despatch. With this warning, seed may be obtained by writing to -

D. Norris,  
Division of Plant Industry,  
C.S.I.R.O.,  
Box 109, P.O.,  
CITY. CANBERRA. A.C.T.

- D.O. NORRIS.

SEED TREATMENTS FOR THE CONTROL OF THE BACTERIAL BLIGHT  
DISEASES OF BEANS:

The recent report by Wark (Jour. Aust. Inst. Agric. Sci. 15: 37-38, 41, : 1949) of the results of experiments on pea and bean seed treatments has prompted the writer to publish this summary of similar work with beans in which, over a number of years, tests have been made of the efficacy of various seed treatments in reducing or eliminating halo blight (Pseudomonas phaseolicola) from naturally infected seed. Most of the results have been obtained from planting treated and untreated seed in sterilised pots of soil in the glasshouse, with frequent inspections and adequate isolation to reduce secondary infection. This glasshouse work has been supplemented by field and laboratory tests.

It was realised that there was little possibility of finding an effective treatment applicable on a commercial scale for bulk lots of seed, and that the value of any treatment evolved would almost certainly be in its use on small lots of seed which, when planted in isolation, could be used to build up supplies of disease-free seed.

Hot water and dry heat treatments either killed the seed or proved ineffective. Treatments in aqueous solutions of various disinfectants for periods up to 3 hours at room temperature were of some value, especially when preceded by treatment for about one minute in various fat solvents (alcohol, ether, xylol and benzol) but the reduction in the amount of inoculum was, in most cases, insufficient to justify their use.

As a result of the publication by Person and Edgerton (Phytopath. 29: 19, 1939) and Krcitlow (Phytopath. 30: 14-15,





1940) of treatments in which ether or alcohol served as solvents for the disinfectant, such treatments were investigated and the following treatment was eventually evolved:-

15 minutes at room temperature in a mixture of diethyl ether (80% by volume), 95% alcohol (18% by volume) and 10% (W/V) mercuric chloride in concentrated hydrochloric acid (2% by volume).

This treatment is actually treatment (1) of Kreitlow, with the addition of acid to improve the disinfecting properties of the mercuric chloride and of alcohol to secure miscibility of the ether with the hydrochloric acid. Germination is only slightly reduced and there is no necessity to plant the seed immediately after treatment. The treatment is not always completely effective but is the best that the writer has tested, and results so far obtained indicate that, when combined with careful hand sorting before treatment to remove discoloured seeds and planting in small isolated plots, it is of value in building up supplies of disease-free seed. A few tests have indicated that the treatment is effective for American common blight (Xanthomonas phaseoli) as well as for halo blight.

It appears that, in order to secure penetration of any disinfectant through the micropyle and beneath the seed coat, a lipid solvent is required. Taking into account both effectiveness of penetration and injury to the seed, ether has been found to be superior to the following:- Acetone, benzol, carbon disulphide, carbon tetrachloride, chloroform, ethyl alcohol, kerosene, petrol, turpentine and xylol. It is probable that further improvements in the method may be obtained by increasing the temperature or time of treatment, or the concentration of mercuric chloride, or by the use of some disinfectant other than, or in addition to, the mercuric chloride. In this respect, in one test in which the mercuric chloride was increased from 0.2% to 0.8% (W/V) and the time of treatment to 70 minutes at 19°C., a 50% reduction in germination resulted, but even a reduction of this magnitude would be of little consequence if the disease were completely eliminated from the seed.

- R.D. WILSON.

#### BEAN SEED CERTIFICATION IN N.S.W.:

During the past season in N.S.W., 926 acres (174 crops) were inspected and 538 acres (105 crops) passed for certification. After allowing for harvesting losses due to wet weather and other causes, it is estimated that about 5,000 bushels of seed will be certified. About 67% of this will be Brown Beauty, 20% Hawkesbury





Wonder and the remaining 13% will comprise the varieties Tweed Wonder, Wellington Wonder, Landreth, New Zealand Stringless Greenpod and Refugee No. 5. Six small crops of the varieties Windsor Longpod, New Beauty, Canadian Wonder and Wellington Wonder were "approved" but were not certified.

As indicated in the table below, anthracnose was, as in the preceding season, responsible for more crop rejections than halo blight, the incidence of which was again low, being found in only 8 crops (5 Brown Beauty, 2 Wellington Wonder and 1 Tweed Wonder).

| Season  | No. of Crops |          |    |        |      |       |
|---------|--------------|----------|----|--------|------|-------|
|         | Certified    | Rejected |    |        |      |       |
|         |              | H.B.     | A. | A.C.B. | O.R. | TOTAL |
| 1945-46 | 45           | 98       | 1  | 10     | 74   | 183   |
| 1946-47 | 114          | 18       | 2  | -      | 60   | 82    |
| 1947-48 | 68           | 16       | 33 | 1      | 30   | 80    |
| 1948-49 | 105          | 8        | 16 | 3      | 36   | 63    |

Notes: H.B. - halo blight; A. - anthracnose; A.C.B. - American common blight; O.R. - other reasons.

- R.D. WILSON.

#### EELWORM ROOT KNOT ON BEANS AND TOMATOES:

Late crops of beans and Tomatoes grown on virgin soil, a heavy clay loam, at Pennant Hills were severely affected with eelworm root knot. The pathogen is probably Heterodera marioni. It was observed that roots of native plants growing in the area had root knot symptoms.

- N.E. WHITE.

#### VIRESCENCE ON FRENCH BEANS AND LAMB'S TAIL:

Two new records of virescence were obtained in the Kingaroy district (Queensland), in March, 1949, on Brown Beauty beans (Phaseolus vulgaris) and on Lamb's Tail (Boussingaultia basellaioides). Extreme forms of phyllody were present in the affected bean plants.

- T. McNICHT.

1. The first part of the paper is devoted to a general discussion of the problem.

2. The second part is devoted to a detailed analysis of the case of a single particle.

3. The third part is devoted to a detailed analysis of the case of a system of particles.

4. The fourth part is devoted to a detailed analysis of the case of a system of particles.

5. The fifth part is devoted to a detailed analysis of the case of a system of particles.

6. The sixth part is devoted to a detailed analysis of the case of a system of particles.

7. The seventh part is devoted to a detailed analysis of the case of a system of particles.

8. The eighth part is devoted to a detailed analysis of the case of a system of particles.

9. The ninth part is devoted to a detailed analysis of the case of a system of particles.

10. The tenth part is devoted to a detailed analysis of the case of a system of particles.

11. The eleventh part is devoted to a detailed analysis of the case of a system of particles.

12. The twelfth part is devoted to a detailed analysis of the case of a system of particles.

13. The thirteenth part is devoted to a detailed analysis of the case of a system of particles.

14. The fourteenth part is devoted to a detailed analysis of the case of a system of particles.

15. The fifteenth part is devoted to a detailed analysis of the case of a system of particles.

16. The sixteenth part is devoted to a detailed analysis of the case of a system of particles.

17. The seventeenth part is devoted to a detailed analysis of the case of a system of particles.

18. The eighteenth part is devoted to a detailed analysis of the case of a system of particles.

19. The nineteenth part is devoted to a detailed analysis of the case of a system of particles.

20. The twentieth part is devoted to a detailed analysis of the case of a system of particles.



A RHIZOCTONIA ASSOCIATED WITH "ROOT" CANKER OF BEETROOT:

Specimens of beetroot collected from the Macquarie River Flats, Bathurst, N.S.W., on 11th June, 1949, showed a black canker of the mature "roots." This condition had not previously been recorded in this State.

The crop was growing on fairly heavy, wet alluvial soil, and about 20% of the 3-4 acres were affected. As seen in the field, affected plants had a yellowish foliage and some of the outer leaves had withered and collapsed. On pulling these plants up a profuse growth of Rhizoctonia was found to be present on sunken areas on the "root" at and below the soil level.

When this growth was removed, a black canker was present underneath. The severest cankering was on the thickest part of the "root". Smaller cankers had coalesced and, in some cases, complete girdling of the whole "root" had occurred. On the slender, tapering part of the "root", small, circular cankers occurred individually. There were no cankers present on the "root" above the soil level and no attack on the crown of the plant. The rot was quite dry, the blackening of the tissue only extending 2-3 mm. into the beet. This blackened area was sharply demarcated from the inner healthy tissue of the "root".

- R.J. CONROY.

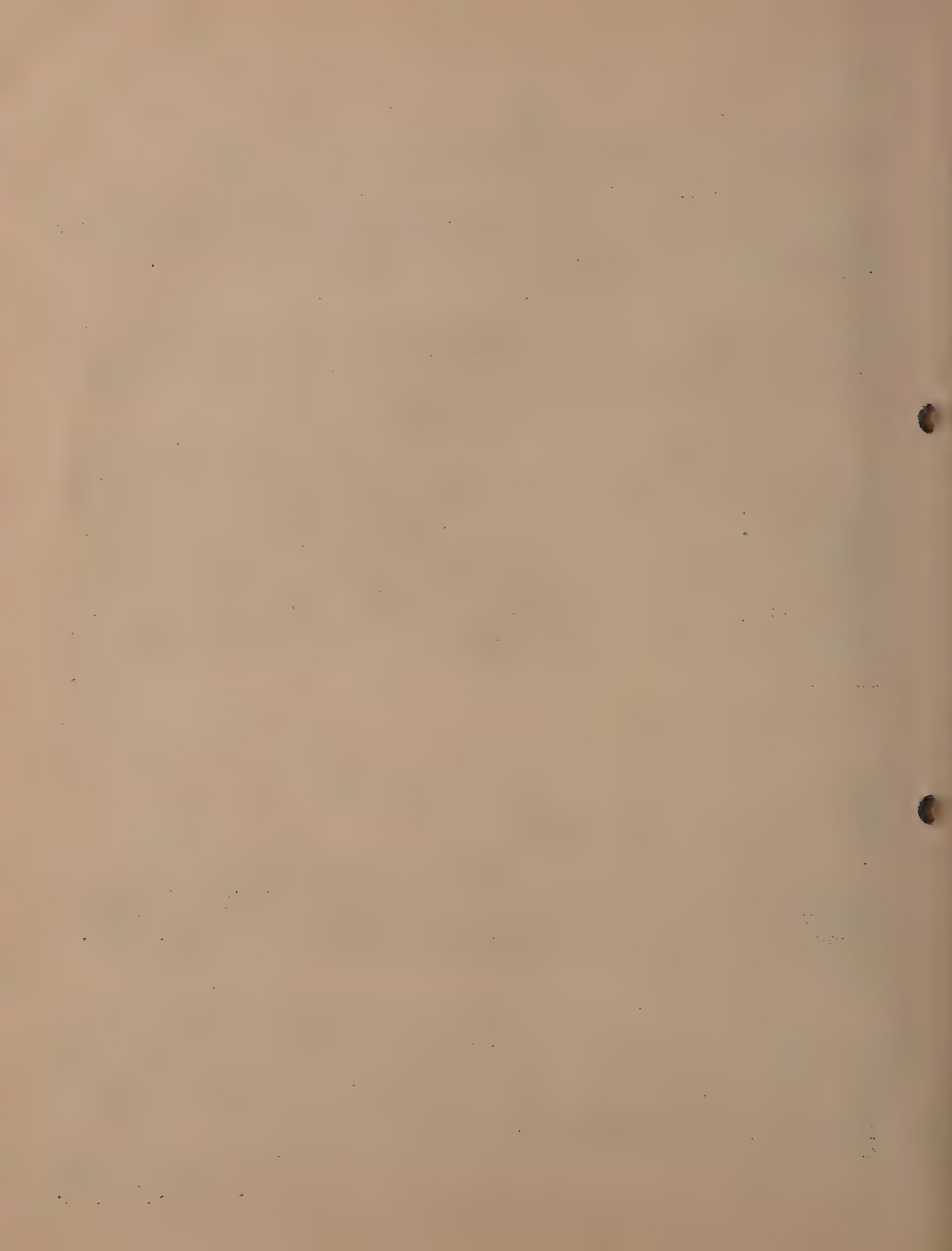
FRUIT:

WATER SPOT IN CANNING PEACHES:

Dark green spots of water-soaked appearance were observed on the skin of a small percentage of canning peaches throughout the Murrumbidgee Irrigation Areas in January, 1949. These glassy areas were generally of a diameter of 4 to 5 mm., and extended from the epidermis well into the flesh, sometimes reaching the stone.

The condition, which resembled watercore in apples, gradually disappeared as the fruit reached maturity and no loss was sustained. There was no suggestion of tissue breakdown, and the spots appeared to consist entirely of an intracellular water injection, which probably occurred during a period of extreme temperature fluctuation at the end of December.

- K.E. HUTTON.





BLACK HEART (VERTICILLIUM DAHLIAE) OF APRICOT:

In July, 1948, this disease was recorded for the first time in N.S.W. at Griffith, on the Murrumbidgee Irrigation Area. The first record was made in a block of 250 Trevatt apricots on Trevatt stock, of which 32 had been killed by the disease. At the same time, black heart was also recorded in a neighbouring block of young peaches.

Subsequently, the disease has been detected in a number of apricot orchards in the Griffith Area, and in all cases the trees have either been grown in old tomato land, or have been interplanted with tomatoes.

On the Murrumbidgee Irrigation Areas, Verticillium wilt of tomatoes does not constitute a problem, but it is thought that a tomato crop in that area can serve to introduce the fungus to the soil, and successful invasion of apricot roots then occurs in the cooler months of the year. Young trees, planted in infected soil, have little chance of escaping the disease for soil temperatures, at the time of planting or shortly afterwards, are moving towards the optimum for Verticillium infection.

- K.E. HUTTON.

STOLON CANKER OF PHENOMENAL AND WESTON STRAWBERRY:

Leaf blight (Dendrophoma obscurans) is a common disease of strawberries in New South Wales and can, under moist conditions, cause considerable leaf injury to susceptible varieties such as Richmond Red. The Phenomenal variety has been regarded as resistant to the disease since leaf injury is rare. During the past six months it has been observed in several areas that Dendrophoma obscurans was causing a destructive canker of fruit stalks and stolons, although leaves and leaf stalks appeared to be free of infection. The variety Weston (a local seedling closely resembling Phenomenal) showed a similar condition.

- L.R. FRASER.

MISCELLANEOUS PLANTS:ANTHRACNOSE OF BATHURST BURR:

In March, 1948, a report was received that a disease was causing widespread destruction of Bathurst burr (Xanthium spinosum) on a station property in the Merriwa district (Central Tablelands)



of N.S.W. The property was visited the following month and 50-80% of the burrs on approximately 2,000 acres of thickly-infested, black soil country were found to be diseased. In areas less thickly populated with burrs, the percentage of infected plants ranged from a trace to 20%.

The disease occurred in the form of extensive black, oval-shaped lesions on the stems, many of which were completely girdled. On examination, these lesions were found to be studded with acervuli, bearing pinkish conidial masses of a species of Colletotrichum. Cultures of this organism were isolated and proved highly pathogenic on Bathurst burr in the glasshouse. Small lesions developed on Noogoora burr (Xanthium pungens) but no infection occurred on 20 other species of crop plants and weeds, including several members of the Compositae, which were inoculated at the same time.

The fungus grows well on P.D.A. and produces numerous large acervuli. The oblong conidia measure 11-18 u x 4-6 u (average 15 x 5 u). The setae are stout, frequently bent, septate (1-2) and measure 50-88 u x 4.5-6 u broad at the base.

Single spore isolates were recently forwarded to the C.M.I., Kew, and Mr. E.W. Mason has identified the fungus as Colletotrichum xanthii. C. xanthii was first recorded in 1892, when B.D. Halstead observed and described it on Xanthium saccharatum in New Jersey, U.S.A. Its occurrence at Merriwa is a first record for N.S.W.

The disease again occurred extensively in the Merriwa district last season and was also observed at Coolah (Central Tablelands) and at Windsor, St. Mary's and Seven Hills (Metropolitan Area). Unconfirmed reports of its occurrence in several areas on the North Western Slopes were also received during the season.

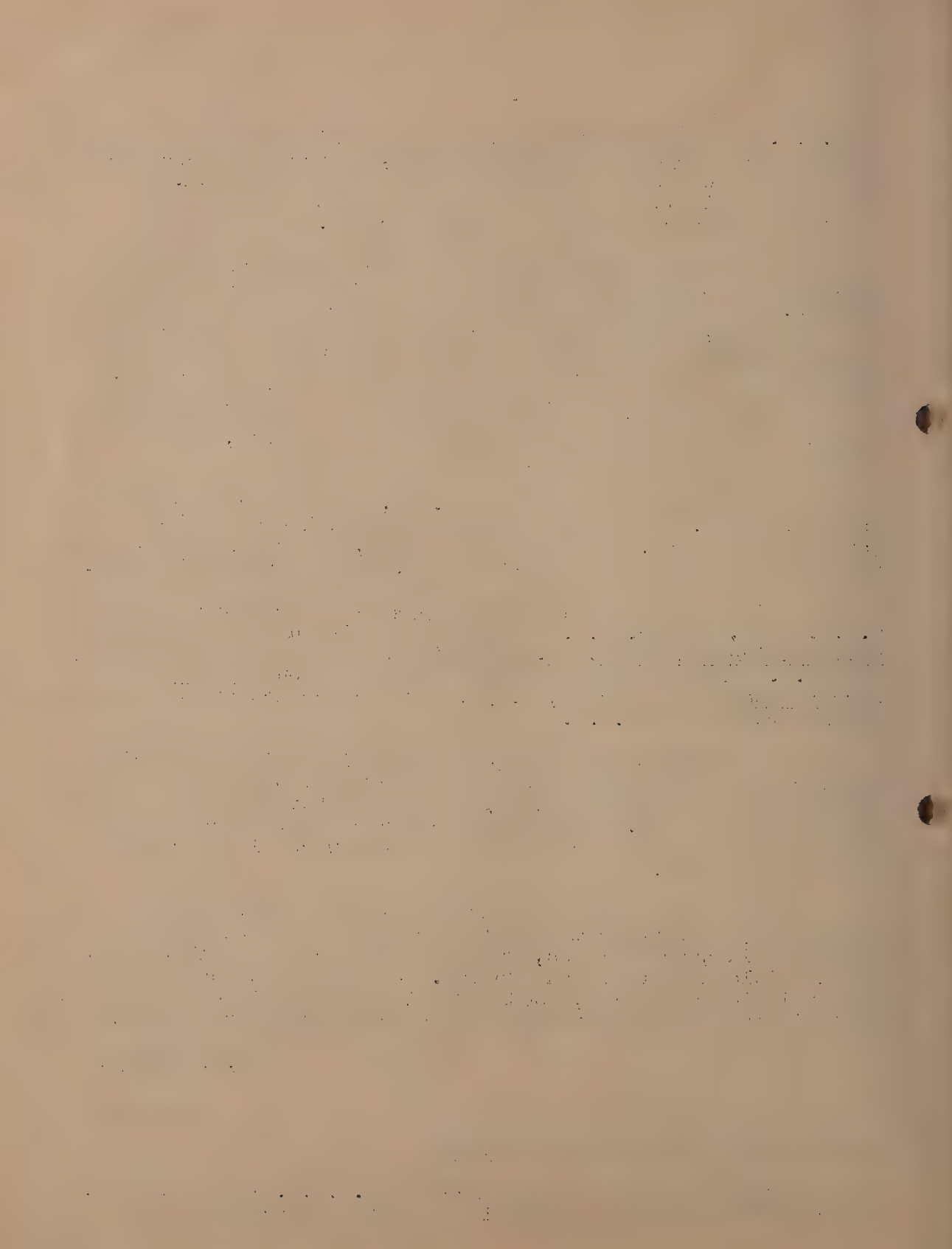
During the summer and autumn of this year, a spore suspension, made up from inoculum produced on sterile oat and rye grain in quart bottles, was used to inoculate Bathurst burrs in the field at Merriwa and Coolah. Although the results were disappointing at Coolah, good infection was obtained at Merriwa. Field inoculation experiments will be continued next season.

- F.C. BUTLER.

#### CERATOPHORUM SETOSUM ON BLUE LUPIN:

Ceratophorum setosum Kirchner (A.P.D.R. 1: 2:27:1949). was recorded in Western Australia in 1940, attacking the leaves,





stems and pods of blue lupin (Lupinus angustifolius). The disease occurs each winter on this species, which is commonly grown in orchards, and some market-gardens, for green manuring purposes.

On the whole it has not proved serious, except where adverse conditions have weakened crop growth, particularly water-logged soil, and shading caused by heavy sowings, or orchard trees. Here, serious defoliation and death of plants may occur.

The disease frequently develops in first plantings, and increases with successive crops, hence the fungus is probably seed borne and over-summers in crop residues.

- W.P. CASS SMITH.

#### SMUT OF POLYGONUM:

McAlpine in "Smuts of Australia", recorded Melanopsichium austro-americanum on Polygonum sp. from Queensland. The same fungus has also been recorded from the United States and the Argentine. Recent work by Hirschhorn has shown that the United States specimens differ from the type specimen from the Argentine, in having yellow, echinulate spores rather than chestnut-violet, smooth spores. Hirschhorn described a new species, Melanopsichium pennsylvanicum, based on these differences. McAlpine describes the spores from the Queensland specimen as "olivaceous, prominently echinulate". A check made of recently collected specimens of the Melanopsichium on Polygonum near Brisbane, showed that the smut occurring in Queensland is Melanopsichium pennsylvanicum.

- J. GREEN.

#### WHITE RUST OF CONVULVULUS SP.:

Reference was made in A.P.D.R. 1: 2: 29, 1949, to an attack of Cystopus ipomacac-panduratae on a species of Convolvulus from Carr's Creek, North Coast of N.S.W. The host has now been identified by the Chief Botanist of the N.S.W. Department of Agriculture as Ipomoea plebeia (Bell-vine).

- R.J. CONROY.





DIE-BACK OF CUPRESSUS MACROCARPA:

The Monterey Cypress (Cupressus macrocarpa) was widely used as a wind-break tree in California for citrus orchards before about 1930. In 1928 Wagener described a canker disease which was causing considerable damage to this species and, later (1939), described the causal fungus (Coryneum cardinale). The same disease was also recorded in New Zealand.

Since its first recognition the disease has assumed major epidemic proportions and is exterminating the Monterey Cypress in most parts of California.

C. macrocarpa is very rarely grown in N.S.W. and it has the reputation amongst nurserymen of being unsatisfactory for our climate. It was assumed that the most probable reason for this was the presence of Coryneum canker, and confirmation of this assumption was obtained recently (May, 1949) when breakwinds of C. macrocarpa in the Orange district were found showing all stages of die-back, and Coryneum cardinale was determined as the cause.

- L.R. FRASER.

GENERAL AND MISCELLANEOUS NOTES:NOTES ON SOME IMPORTANT PLANT DISEASES IN U.S.A.

The following observations on diseases of economic importance in the U.S.A. were made during the recent tenure of a scholarship in that country. Diseases referred to have either not yet been recorded in Australia (fire blight, dwarf bunt and Helminthosporium blight), have not assumed serious proportions here (oats powdery mildew) or have been kept in check by local quarantine and control measures (corn smut and flag smut).

1. Dwarf bunt of wheat, at present considered a race of Tilletia caries, was proving important in the Pacific North West and in New York State. The bunt has not proved to be subject to control by ordinary seed dust treatments. The breeding of resistant varieties was complicated by the fact that seed inoculation in inducing artificial epiphytotics proved to be unreliable. Most success for securing infection in breeding was secured by sowing on areas in which previously contaminated crops had been grown.

2. In spite of local and federal quarantine regulations, flag-smut of wheat (Urocystis tritici) is apparently increasing in the Pacific Northwest and was reported in the State of Oregon



as the most southerly locality in which it has yet been recorded in this area.

3. Helminthosporium blight (Helminthosporium victoriae) on oats was confined to varieties from which crown rust resistance had been incorporated from "Victoria". In addition to a seedling blight, heavy lodging in mature plants resulted in case of severe infection and yields were considerably reduced.

4. In California powdery mildew of oats (Erysiphe graminis avenae) was noted abundantly on wild oats (Avena fatua) and certain varieties in the plant breeding plots. Early in the spring damage was severe on susceptible varieties.

5. Corn Smut (Ustilago maydis) which has become more widespread with the advent of the mechanical corn harvester. However, most inbreds and hybrids appear to possess moderate resistance or tolerance to the races of the organism in the particular localities to which they are adapted.

6. Fire blight (Erwinia amylovora) in the pome fruit areas of California, particularly the pear orchards of the Central valleys, was recognised as a major problem in production. Tree pruning and surgery by experienced operators in removing infection centres on limbs and twigs were regular seasonal operations in the case of severe infections.

- E.P. BAKER.

#### GENERIC NOMENCLATURE OF THE BULB AND STEM NEMATODE:

In 1936, Filipjev (Proc. Helminth. Soc. Washington 3: 80-82, 1936) suggested a generic subdivision of the genus Anguillulina Gervais et van Beneden, as a result of which the bulb and stem nematode Anguillulina dipsaci (Kuehn) Gervais et van Beneden would be placed in a new genus - Ditylenchus.

In 1941 the writer sought the opinion of Dr. G. Steiner of the United States Department of Agriculture on this matter. Dr. Steiner stated "We have accepted Filipjev's nomenclature in this case. Ditylenchus as a genus is certainly well differentiated from other genera formerly grouped together under Anguillulina. The differentiation from Anguina is more difficult, but even here I am inclined to accept Filipjev's proposition." Although Ditylenchus has come into general use in the United States as the generic name for the bulb and stem nematode, workers in Great Britain have retained the name Anguillulina and, for this reason, inquiries were recently directed to Dr. T. Goodey at Rothamsted. Dr. Goodey stated that he had not seen the need to accept Filipjev's classification and that, for the present,





he preferred to regard the genus Anguillulina as a whole. He stated that he expected Mr. Gerald Thorne of Salt Lake City to publish a revised classification of the tylenchs before long and that, until this publication appeared, he would stick to Anguillulina rather than change to Ditylenchus and the various other genera.

Following this information from Dr. Goodey, it has been decided to use the generic name Anguillulina for the bulb and stem nematode in the 1948-49 N.S.W. Plant Disease Survey, although Ditylenchus has been used in some earlier issues.

- R.D. WILSON.

#### THE 1949 CONFERENCE ON PLANT DISEASES.

The May Conference sponsored by the C.S.I.R.O. was the most representative phytopathological meeting yet held in Australia. It was attended by delegates of all interested State and Commonwealth Departments, and Universities. A similar, but far less representative meeting, had been held in 1928.

It was clear that much progress had been made in the interim. Consider the diseases of wheat. The N.S.W. records contain the following reference to flag smut:- "In 1920 damage amounting to 50% was noted in some cases, while in 1922, in the Western areas, the yield was reduced by 30 per cent. Loss in 1925 estimated to be 2,000,000 bushels of wheat." Last year, flag smut was reported in an occasional crop only. Bunt also has practically disappeared, while take-all - the threat to the industry earlier - is of much less consequence. Many rust-resistant varieties are now coming into cultivation. There is also now a Quarantine Service and a strong team of investigators in every State.

Much still remains to be done. Heavy losses are still occurring from apple scab and brown rot of stone fruits, while the viruses spotted wilt and big-bud have not yet yielded to our attacks. Viruses of which we know little have been revealed in our citrus, pome and stone fruits. Seed certification has done wonders with our potato and bean seed, but peas and some other vegetables are still in trouble with seed-borne diseases. Certification will need to be extended, too, to bud-wood and stocks of certain fruit crops. Breeding for disease resistance has been fruitful but must be pressed on, especially the incorporation of frost resistance into new cereal varieties. It is undesirable that Australia develop a wild barberry problem and nematode diseases require investigation. Our facilities need strengthening in the direction of an Australian Check List,

[illegible]



a Type Culture Collection, a Centre for virus identification, the maintenance of the existing Centre for rust race studies, and the establishment of a fungicide research unit. Fundamental research work should receive more support and, in particular, the pathology advisory services of Australia must be strengthened by all possible means. These ideas are embodied in 18 resolutions which will be placed before the Standing Committee on Agriculture at its next meeting.

- C.J. MAGEE.

#### A LETTER OF HISTORICAL INTEREST:

During a recent visit to Wagga, a letter written by William James Farrer to Dr. N.A. Cobb was found amongst some old, discarded records in the weigh-bridge shed at the Wagga Agricultural College and Experiment Station.

The letter, written from Lambrigg in September, 1897, is in a small, neat hand and includes notes on the main morphological differences between durum and poulard wheats and a suggestion that the N.S.W. Department of Agriculture purchase a small mill in connection with a proposal to test "a large number of standard varieties" before "a committee of millers, bakers and experts."

Another paragraph, in which Farrer refers to his plant breeding plots at Lambrigg, concludes with the remark, "I only wish, however, we could get a rusty season."

The letter, of four pages, and in a good state of preservation, has now been placed among the archives of the Farrer Trust.

- F.C. BUTLER.

#### CENTENARY OF BIRTH OF DANIEL McALPINE:

This year represents the centenary of the birth of Daniel McAlpine. To mark the occasion, the following biographical notes on McAlpine are provided for the benefit of readers of the Recorder.

Daniel McAlpine was born in Scotland in 1849 and arrived in Melbourne in 1884 to take up a lectureship in Biology at Ormond College, University of Melbourne. He studied Biology under Huxley and Botany under Thiselton Dyer at the Royal College



of Science in London before joining the staff of the Heriot Watt College in 1877. McAlpine was appointed as Vegetable Pathologist to the Victorian Department of Agriculture on May 12th, 1890. In 1895 he published a systematic census of Australian fungi and in 1906 a monograph on the rusts of Australia. This was followed in 1910 with a companion volume on smuts of Australia. As a Mycologist, he is best known by these two monographs. In all, he published some 30 papers dealing with fungus flora of Australia.

On the pathological side he published three volumes on diseases of citrus in 1889, diseases of stone fruits in 1902 and diseases of potatoes in 1911. Also 50 papers dealing in fungus diseases of crop plants. They were published by him in the Victorian Journal of Agriculture.

In 1911 he was commissioned to undertake, on behalf of the Commonwealth Government, an investigation into the nature and control of bitter pit in apples and he published five reports dealing with this work between 1912 and 1916.

In 1916, McAlpine retired. He died on the 10th October, 1932 at Leitchville at the age of 83 and was buried at the Cohuna Cemetery, Victoria. McAlpine was the first Plant Pathologist to be appointed to any Government within the British Empire and his work ranks him as the pioneer Plant Pathologist of his adopted country, Australia.

- S. FISH.

#### BACK NUMBERS OF A.P.D.R. AVAILABLE:

Members of the A.P.D.R. mailing list who, for any reason, have not received Nos. 1 and/or 2 of Vol. 1 of the Recorder can now be supplied with the missing number(s) on request.

- EDITOR.

#### COMMONWEALTH MYCOLOGICAL INSTITUTE NOTES.

#### Report of the Fourth Commonwealth Mycological Conference, 1948:

The report of this Conference is now available as a printed C.A.B. publication. The resolutions of the Conference deal with proposals for an African Phyto-Sanitary Convention, the need to keep Dothidella ulei out of South-East Asia, and the advisability of a similar Convention for that region, the need for greater attention to be given to the control of seed-borne





diseases, and for expansion of research on problems of wastage of stored foodstuffs. A special resolution covers the work, organisation and housing of the C.M.I. Discussions of the Conference occupy 64 pp. and are full of interest. They deal with seed certification against seed-borne diseases; control of the virus diseases swollen shoot of cacao, phloem necrosis of tea, tomato spotted wilt, and virus diseases of stone and other fruits, hops and potatoes; the diagnosis of nutritional disorders; losses due to fungi in stored foodstuffs; the certification of fungicides, the use of fungicides in the tropics, and the development of new fungicides; recent development in pest and disease control machinery; application of insecticides and fungicides from the air; biological control of weeds; and forest pathology. The disease which is causing the most intense hardship at present is the swollen shoot disease of cacao. In one of the main cocoa-producing areas of the Gold Coast there are about 300 sq. miles of dead cacao and a belt of 200 sq. miles around this area through which the disease is advancing and killing the trees.

#### South-East Asia Phyto-Sanitary Conference:

A Conference was held in Singapore in May last to establish a plant health and plant quarantine Convention for South-East Asia. The Conference was attended by representatives from Ceylon, India, Indo-China, Indonesia, Federation of Malaya and Singapore and the United Kingdom. Observers were present from the United States, South Pacific Commission and United Nations. The United Kingdom was represented by Dr. S.P. Wiltshire, Director of the Commonwealth Mycological Institute, and the United States by Dr. R.V. Rands. The proposals of the Conference are to establish a permanent Advisory Commission and a permanent Information Centre with a plant pest and disease service in each country, complete with quarantine stations, etc. The Commonwealth Institutes of Entomology and Mycology are to serve as the centre of information. The diseases most feared are South American leaf blight of Hevea rubber (Dothidella ulei) and the cacao swollen shoot virus.

This Phyto-Sanitary Convention is similar to another being established for Africa, south of the Sahara, and subscribed to by Belgium, Ethiopia, France, Liberia, Portugal, the Union of South Africa, Southern Rhodesia and the United Kingdom. Provision is again made for a permanent Plant Quarantine Commission and a central Committee of Information, of which the Directors of the Institutes of Entomology and Mycology shall be members.

These conventions reveal an interesting trend in internationalism and the acceptance of the Commonwealth Institutes as Information Centres is indicative of the high regard in which they are held throughout the world.

1. The first part of the report is a general introduction to the subject of the study.

2. The second part of the report is a detailed description of the methods used in the study.

3. The third part of the report is a discussion of the results of the study.

4. The fourth part of the report is a conclusion and a list of references.

5. The fifth part of the report is a list of appendices.

6. The sixth part of the report is a list of figures and tables.

7. The seventh part of the report is a list of footnotes.

8. The eighth part of the report is a list of references.

9. The ninth part of the report is a list of appendices.

10. The tenth part of the report is a list of figures and tables.

11. The eleventh part of the report is a list of footnotes.

12. The twelfth part of the report is a list of references.

13. The thirteenth part of the report is a list of appendices.

14. The fourteenth part of the report is a list of figures and tables.

15. The fifteenth part of the report is a list of footnotes.



NEW C.A.B. TECHNICAL COMMUNICATIONS - IN PREPARATION.

1. Manual of Rice Diseases.
2. The Leaf Curl Disease of Cotton.
3. Sand and Water Cultures in the Study of Plant Nutrition.

- C.J. MAGEE.





